

NICOTINE

Nicotine is highly addictive. It is both a stimulant and a sedative to the central nervous system. The ingestion of nicotine results in an almost immediate “kick” because it causes a discharge of epinephrine from the adrenal cortex. This stimulates the central nervous system, and other endocrine glands, which causes a sudden release of glucose. Stimulation is then followed by depression and fatigue, leading the abuser to seek more nicotine. Nicotine is absorbed readily from tobacco smoke in the lungs, and it does not matter whether the tobacco smoke is from cigarettes, cigars, or pipes.

▼ Physical Effects

Nicotine also is absorbed readily when tobacco is chewed. With regular use of tobacco, levels of nicotine accumulate in the body during the day and persist overnight. Thus, daily smokers or chewers are exposed to the effects of nicotine for 24 hours each day. Nicotine taken in by cigarette or cigar smoking takes only seconds to reach the brain but has a direct effect on the body for up to 30 minutes.

Research has shown that stress and anxiety affect nicotine tolerance and dependence. The stress hormone corticosterone reduces the effects of nicotine; therefore, more nicotine must be consumed to achieve the same effect. This increases tolerance to nicotine and leads to increased dependence.

▼ Psychological Effects

Studies have shown that animals cannot discriminate between the effects of nicotine and the effects of cocaine. Addiction to nicotine results in withdrawal symptoms when a person tries to stop smoking. Smokers become physically and psychologically dependent and will suffer withdrawal symptoms including: changes in body temperature, heart rate, digestion, muscle tone, and appetite. Psychological symptoms include: irritability, anxiety, sleep disturbances, nervousness, headaches, fatigue, and nausea; and cravings for tobacco that can last days, weeks, months, years, or an entire lifetime.

▼ Risk to Women and Children

Women who smoke generally have earlier menopause. If women smoke cigarettes and also take oral contraceptives, they are more prone to cardiovascular and cerebrovascular diseases than are other smokers; this is especially true for women older than 30.

Pregnant women who smoke cigarettes run an increased risk of having stillborn or premature infants or infants with low birthweight. Children of women who smoked while pregnant have an increased risk for developing conduct disorders. National

studies of mothers and daughters have also found that maternal smoking during pregnancy increased the probability that female children would smoke and would persist in smoking.

Adolescent smokeless tobacco users are more likely than nonusers to become cigarette smokers. Smoking is particularly dangerous for teens because their bodies are still developing and changing and the 4,000 chemicals (including 200 known poisons) in cigarette smoke can adversely affect this process. One-third of young people who are just “experimenting” end up being addicted by the time they are 20. Behavioral research is beginning to explain how social influences, such as observing adults or other peers smoking, affect whether adolescents begin to smoke cigarettes. Research has shown that teens are generally resistant to many kinds of anti-smoking messages.

▼ Other Factors

The Environmental Protection Agency has concluded that secondhand smoke causes lung cancer in adults and greatly increases the risk of respiratory illnesses in children and sudden infant death.

Cigarette smoking is the most preventable cause of disease and premature death. The risks associated with smoking cigarettes are:

- Diminished or extinguished sense of smell and taste
- Frequent colds
- Smoker’s cough
- Gastric ulcers,
- Chronic bronchitis,
- Increase in heart rate and blood pressure,
- Premature and more abundant face wrinkles
- Emphysema,
- Heart disease,
- Stroke, and
- Cancer of the mouth, larynx, pharynx, esophagus, lungs, pancreas, cervix, uterus, and bladder.

When a person quits smoking, many of the short-term adverse effects of cigarette use are abated or reversed.

▼ Information

For additional information about the health effects of nicotine and tobacco products, and about prevention and smoking cessation, visit the websites of the National Institute on drug Abuse (www.drugabuse.gov), and the Centers for Disease Control and Prevention (www.cdc.gov).



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